Amendments to the Specification

Please replace the paragraph beginning at line 4 of page 2 with the following rewritten paragraph:

This application is a divisional of U.S. Application Serial No. 09/548,848, filed April 13, 2000 (now issued as U.S. Patent No. 6,455,316), which is a continuation-in-part of U.S. Application No. 09/239,223, filed January 29, 1999 (now issued as U.S. Patent No. 6,489,168), and a continuation-in-part of U.S. Application No. 09/211,982, filed December 14, 1998 (now issued as U.S. Patent No. 6,306,658), which is a continuation in part of U.S. Application No. 09/177,170, filed October 22, 1998 (now issued as U.S. Patent No. 6,548,026), which claims the benefit of U.S. Provisional Application No. 60/096,603, filed August 13, 1998. ~~All four of~~ All five of the foregoing applications are incorporated herein by reference in their entirety.

Please add the following new paragraphs immediately before the paragraph beginning at line 30 of page 8:

In general, in another aspect, the invention features a parallel reactor for simultaneously processing a plurality of reaction mixtures. Vessels contain the reaction mixtures and multi-piece spindles stir the reaction mixtures in the vessels. Each multi-piece spindle comprises a metal upper spindle portion, a plastic stirrer comprising a shaft having a plastic core and a plastic mixing blade on the shaft, and a coupling for releasably coupling the plastic stirrer to the metal upper spindle portion in a position wherein the stirrer extends down into a respective vessel. The plastic stirrer is removable from the coupling after a mixing operation to permit replacement of the stirrer.

In general, in another aspect, the invention features plastic stirrers for use in stirring reaction mixtures in a parallel reactor. The reactor comprises vessels for containing the reaction mixtures, metal spindle portions associated with the vessels, and couplings on the metal spindle portions for releasably coupling the plastic stirrers to the spindle portions in positions wherein the stirrers extend down into the vessels. A drive system rotates the metal spindle portions and the plastic stirrers coupled thereto thereby to mix the contents of the vessels. Each plastic stirrer comprises a shaft having a plastic core and a plastic mixing blade on

the shaft. The shaft has a quick-connect/disconnect element thereon adapted for engagement with the coupling for releasably coupling the plastic stirrer to the metal spindle portion for rotation therewith whereby upon completion of a mixing operation the plastic stirrer is adapted to be disconnected from the coupling and replaced by a new plastic stirrer.

In general, in another aspect, the invention features an apparatus for the parallel processing of reaction mixtures. A reactor block having a series of wells therein extends down from an upper surface of the block for containing the reaction mixtures. An upper plate is removably secured to the reactor block over the upper surface thereof. The upper plate has openings therein in registry with the wells in the reactor block. Stirring mechanisms attached to the upper plate and removable with the upper plate stir the reaction mixtures. The stirring mechanisms extend down through the openings in the upper plate and into respective wells. Seals seal against leakage through the upper plate openings when the upper plate is secured to the reactor block. Each stirring mechanism comprises a drive mounted on the upper plate and a multi-piece spindle rotatable by the drive. The multi-piece spindle has a metal upper spindle portion, a plastic stirrer, and a coupling for releasably coupling the plastic stirrer to the metal upper spindle portion in a position wherein the stirrer extends down into a respective well. The plastic stirrer being removable from the coupling after a mixing operation to permit replacement of the stirrer.

In general, in another aspect, the invention features an apparatus for parallel processing of reaction mixtures. A reactor block having a series of wells therein extending from an exterior surface of the block for containing the reaction mixtures. A removable plate is removably secured to the reactor block. The removable plate has openings therein in registry with the wells in the reactor block. A temperature control system regulates the temperature of the reaction mixtures. A stirring system attached to the removable plate and removable with the removable plate agitates the reaction mixtures. The stirring system comprises spindles extending into respective wells, each of the spindles having a first end portion and a second end portion. A stirring blade attaches to the first end portion of each of the spindles. A drive mechanism located external to the vessels is adapted to rotate the spindles.

In general, in another aspect, the invention features a parallel reactor for simultaneously processing a plurality of reaction mixtures. Vessels contain the reaction mixtures, and multi-piece spindles stir the reaction mixtures in the vessels. Each multi-piece spindle comprises a metal upper spindle portion, a plastic stirrer comprising a shaft having a plastic core, and a plastic mixing blade on the shaft. A coupling releasably couples the plastic stirrer to the metal upper spindle portion in a position wherein the stirrer extends down into a respective vessel. The plastic stirrer is removable from the upper spindle portion after a mixing operation to permit replacement of the stirrer. A drive system rotates the multi-piece spindles to mix the contents of the vessels. The drive system comprises a drive mechanism located external to the vessels and magnetic feed through devices for magnetically coupling the drive mechanism to the upper spindle portions of the multi-piece spindles. Each upper spindle portion comprises a leg extending down from a respective magnetic feed through device.

In general, in another aspect, the invention features a parallel reactor for simultaneously processing a plurality of reaction mixtures. The reactor comprises vessels for containing the reaction mixtures. Plastic stirrers comprise a shaft having a plastic core and a plastic mixing blade on the shaft for stirring the reaction mixtures in the vessels. A drive system moves the stirrers to mix the contents of the vessels. A coupling releasably connects each stirrer to the drive system in a position wherein the stirrer extends down into a respective vessel. The plastic stirrer being removable from the coupling to permit replacement of the stirrer.

In general, in another aspect, the invention features plastic stirrers for use in stirring reaction mixtures in a parallel reactor. The reactor comprises vessels for containing the reaction mixtures. A drive system moves the stirrers to mix the contents of the vessels, and couplings releasably connect the plastic stirrers to the drive system in positions wherein the stirrers extend down into the vessels. Each plastic stirrer comprises a shaft having a plastic core and a plastic mixing blade on the shaft. The shaft has a quick-connect/disconnect element thereon adapted for engagement with the coupling for releasably connecting the plastic stirrer to the drive system . Upon completion of a mixing operation the plastic stirrer is

adapted to be disconnected from the coupling and replaced by a new plastic stirrer.

In general, in another aspect, the invention features a combinatorial chemistry reactor system for parallel processing of reaction mixtures. A reactor block has a series of wells therein for holding the reaction mixtures. A removable plate removably secures to the reactor block. The removable plate has openings therein in registry with the wells in the reactor block. Seals for sealing the wells of the reactor block allow the reaction mixtures to react under pressure when the removable plate is secured to the reactor block. A stirring system is supported by the removable plate and is removable with the removable plate for agitating the reaction mixtures. The stirring system comprises stirrers extending into respective wells and a drive mechanism located external to the wells for moving the stirrers to agitate reaction mixtures in the wells.

In general, in another aspect, the invention features a combinatorial chemistry reactor system for parallel processing of reaction mixtures. A reactor block has a series of wells therein extending down from an upper surface of the block. The wells holding the reaction mixtures. An upper plate removably secures to the reactor block in face-to-face relation with the upper surface. The removable plate has openings therein in registry with the wells in the reactor block. Seals for sealing the wells of the reactor block allow the reaction mixtures to react under pressure when the removable plate is secured to the reactor block. A stirring system is supported by the removable plate and is removable with the removable plate for agitating the reaction mixtures. The stirring system comprises stirrers extending into respective wells and a drive mechanism located external to the wells for moving the stirrers to agitate reaction mixtures in the wells. The drive mechanism comprises a drive train for driving the stirrers and one or more motors for driving the drive train. The stirrers are removably attached to the drive mechanism.